

## **A Signal Processing Method and Device**

### **For Signal-to-Noise Improvement**

5

#### **ABSTRACT OF THE DISCLOSURE**

A method and apparatus extract a signal component of a measured signal using one of two methods. If the signal component in the measured signal is a periodic signal with a certain well-defined peak-to-peak intensity value, upper and lower envelopes of the measured signal are determined and analyzed to extract said signal component of the measured signal. This signal component can further be used to calculate a desired parameter of the sample. The DC component of the signal is determined as the median value of the upper envelope, and the AC component is determined as the median value of the difference between the upper and lower envelopes. If the signal component of the measured signal is a periodic signal characterized by a specific asymmetric shape, a specific adaptive filtering is applied to the measured signal, resulting in the enhancement of the signal component relative to a noise component. This adaptive filtering is based on a derivative of the Gaussian Kernel having specific parameters matching the characteristics of the signal component.